

PYROLA ROTUNDIFOLIA AND *P. AMERICANA*.

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WHEN, in 1904, I pointed out<sup>1</sup> the distinctions between the northern Eurasian *Pyrola rotundifolia* L. and the Alleghenian *P. americana* Sweet, no material was available which clearly broke down the distinctions between the two, and this fact was reinforced by the isolation of the two plants and the decidedly southern and dry habitat of *P. americana*, contrasted with the northerly and more varied habitat of *P. rotundifolia*.

In 1904 a single collection was at hand which somewhat bridged the gap between the two plants. This material, from a sphagnum swamp at Manuel's, Newfoundland (*Robinson & Schrenk*), smaller in all details than the continental *P. americana*, was at that time supposed to be referable to *P. asarifolia* Michx., var. *incarnata* (Fisher) Fernald. Subsequent experience in Newfoundland, however, has shown that the plant of the Manuel's sphagnum swamp is generally distributed throughout the central and southeastern acid region of the island and that in every character it exactly connects Eurasian *P. rotundifolia* and Atlantic American *P. americana*. The Newfoundland plants have been studied with the greatest care at different intervals during a period of several years, always with the same result, namely: the Newfoundland plant seems inseparable from Eurasian material of *P. rotundifolia*, var. *arenaria* Mert. & Koch and this differs in no morphological character from the continental and more southern *P. americana*. The only differences are those of size, var. *americana* running larger in all its parts. The latter plant throughout most of its range, from Nova Scotia, Prince Edward Island, western Bonaventure and Rimouski Cos., Quebec to Frontenac Co., Ontario, South Dakota and Georgia, inhabits dry or sandy woods, but northward, at the northeastern limits of its range, for example, on the upper St. Francis in Maine, at Bic, in Rimouski Co., Quebec, and at Nouvelle in Bonaventure Co., Quebec, var. *americana* is found only in wet, mossy, spruce woods or at the borders of sphagnum bogs. In this interchange of habitats *P. rotundifolia*, var. *americana* falls into the same class of oxylophytes as *Cypripedium acaule* Ait., *Epigaea*

<sup>1</sup>RHODORA, vi. 201 (1904).



*repens* L., *Gaultheria procumbens* L. and *Gaylussacia dumosa* (Andr.) T. & G. (as var. *Bigeloviana* Fernald), which southward are characteristic of dry silicious habitats (pine or oak barrens and dry woods, etc.) but which northward, especially in the dominantly calcareous areas bordering the Gulf of St. Lawrence, are apparently able to exist, at least are found only in the acid bogs and black spruce swamps.

In Newfoundland, *P. rotundifolia*, var. *arenaria* likewise has interchangeable habitats, sometimes occurring in open sandy or gravelly thickets or on pond-shores, but oftenest in wet sphagnum bogs or spruce swamps. In the latter habitat the branches of the subterranean stems become greatly elongated and their coriaceous, brown, oblong, blunt or mucronate bracts consequently remote; in the drier habitats the caudex is short and the bracts more crowded as in most European specimens. Var. *arenaria*, although not definitely known from the American continent, is the representative of the species in Greenland; and, now well known from Newfoundland, it is to be sought on the Labrador Peninsula and elsewhere in our northern regions.

The two American varieties of *P. rotundifolia* may be distinguished as follows:

*P. ROTUNDIFOLIA* L., var. *ARENARIA* Mert. & Koch in Roehling, Fl. Deutschl. iii. 103 (1831); Koch, Syn. 478 (1838); Lange, Consp. Fl. Groenl. 84 (1880); Andres, Oesterr. Bot. Zeitschr. lxxiv. 239 (1914). *P. intermedia* Schleich. Cat. Pl. Helv. ed. 3, 23 (1815). *P. maritima* Kenyon, Phytol. ii. 727 (1847). *Thelaia intermedia* (Schleich.) Alef., Linnaea, xxviii. 65 (1856).—Leaf-blades 1.8–5 cm. long, 1.5–4 cm. broad: racemes 3–13-flowered, in anthesis 2–9 cm. long: lower bracts 1–2 mm. broad: calyx 5–7 mm. broad, its firm lance-oblong to oblong-obovate lobes 1.6–3 mm. long: petals 5–7 mm. long, 4–6 mm. broad: anthers 2–2.7 mm. long.—Northern and middle Europe and Asia; Greenland and Newfoundland. The following NEWFOUNDLAND specimens belong here: sphagnum swamp, Manuel's, August 8, 1894, *Robinson & Schrenk*; cool thicket, Western Bay, Conception Bay, August 21, 1914, *G. S. Torrey*, no. 94; boggy places on hill southwest of Tilt Cove, August 21, 1911, *Fernald, Wiegand & Darlington*, no. 6001; open bogs among the hills, Grand Falls, July 26, 1911, *Fernald, Wiegand, Bartram & Darlington*, no. 6000; wet boggy woods, Millerton Junction, *Fernald, Wiegand & Darlington*, no. 5998; gravelly beach, Middle Birchy Pond, July 11, 1910, *Fernald & Wiegand*, no. 3812.

Var. **americana** (Sweet), n. comb. *P. americana* Sweet, Hort. Brit. ed. 2, 341 (1830); Fernald, RHODORA, vi. 201 (1904); Andres,



Oesterr. Bot. Zeitschr. lxiv. 243 (1914), in part.—Leaf-blades 2.5–8 cm. long, 2–7 cm. broad: raceme 5–21-flowered, in anthesis 0.25–2 dm. long: lower bracts 2–4 mm. broad: calyx 6.3–10 mm. broad; its firm oblong to rhombic lobes 2.5–4.3 mm. long: petals 6.5–10.5 mm. long, 3.5–8 mm. broad: anthers 2.7–3.6 mm. long.—Chiefly in dry woods or clearings, or northward in bogs and swamps, Nova Scotia, Prince Edward Island and western Bonaventure County, Quebec to Frontenac Co., Ontario, Minnesota, South Dakota, and Georgia.<sup>1</sup>

GRAY HERBARIUM.

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## REPORTS OF THE FLORA OF THE BOSTON DISTRICT,—XXXIII.

### CISTACEAE.

#### HELIANTHEMUM.

**H. Bicknellii** Fernald (*H. majus* BSP.; see RHODORA xxi. 36, 1919). Dry soil, common, especially southward.

**H. canadense** (L.) Michx. Dry rocky and sandy soil, very common throughout.

#### HUDSONIA.

**H. ericoides** L. Cohasset Narrows (*W. G. Farlow*, August, 1877). Specimen in Herb. Gray.

<sup>1</sup> Andres gives a much broader range and cites specimens from Montana, Colorado, Utah and Idaho. These plants are certainly not var. *americana*. In his articles on *Pyrola* (as *Pirola*) Andres has frequently misinterpreted American plants and American literature. Thus, for example, he makes an amazing interpretation of a note by the present writer. In discussing the absence from Newfoundland of many common Canadian species the writer said: "But the distance across Cabot Strait, the shortest route from the southwestern mainland to Newfoundland is fully 70 miles, and, although this does not seem a forbidding gap, the fact remains that very many common Canadian species with fine spores or with the seeds plumose, feathery or otherwise adapted for wind-transportation have failed to cross from Cape Breton to southwestern Newfoundland. Among such species . . . are *Lycopodium sabinaefolium*, *Adiantum pedatum*, *Dryopteris marginalis*, *Pyrola elliptica* and *Chimaphila umbellata*," etc. But Andres's Germanic mind has interpreted this list as an indication of the plant association to which *Pyrola elliptica* belongs; in his monographic studies of the genus saying under *P. elliptica* "Begleitpflanzen siehe Fernald. Expeditions [Expedition] to New-Foundland [Newfoundland]. RHODORA XIII. (1911) 147: *Lycopodium sabinaefolium*, *Adiantum peltatum* [pedatum], *Dryopteris* [Dryopteris] *marginalis*, *Chimophila* [Chimaphila] *umbellata*." (Andres, Allgem. Bot. Zeitschr. xx. 117. 1914).